ment of the present invention, blower motor **96** is a Graingers Model Number 3M805. Thermistor **74** is preferably a TMC thermistor having a resistance of approximately 20K OHM resistance of 25° Centigrade.

Controller **82** is provided with a control knob, designated by reference numeral **100** in FIG. **8**. By turning control knob **100**, a user may select the set point against which the error signal generated by thermistor **74** is compared. Controller **82** serves to vary the magnitude of the output voltage supplied at output terminal **94** to blower motor **96** in accordance with the magnitude of the error described above. The temperature sensed by thermistor **74** is converted by the thermistor to a resistance which is monitored by controller **82** and compared with a reference that is determined in accordance with the position of control knob **100**. Thus, the speed of blower motor **96** is increased when the temperature sensed by thermistor **74** rises above the set point temperature, while the speed of blower motor **96** is decreased when the termperature sensed by thermistor **74** falls below the set point temperature.

In the preferred embodiment of the present invention, the speed of blower motor **96** is continuously variable by controller **82**. However, it is within the contemplation of the present invention to regulate the application of electrical power to blower motor **96** in a stepped fashion (high, medium, low) in order to vary the speed of blower motor **96**.

Controller **82** itself lacks any means for visually indicating to the user the sensed temperature of panel **72**. Accordingly, a separate indicator **102** is provided, as indicated in FIG. **8**. Indicator **102** is preferably a microprocessor temperature controller of the type available from Omega Engineering, of Stamford, Conn., under Model Number CN9111. Indicator **102** includes a 3½ digit green LED readout for displaying the temperature sensed by thermocouple **76**. As shown in FIG. **8**, terminals **4** and **5** of indicator **102** are coupled to wires **80** for receiving the electrical signal generated by thermocouple **76**. Terminal **2** of indicator **102** is grounded, while terminals **1** and **10** of indicator **102** are adapted to receive a source of 115 volts A.C.

Within FIG. **8**, reference numeral **104** designates a source of 115 volts A.C. electrical power. The "hot" side of power source **104** is connected to a first side of a shut-off switch **106** which may be selectively operated by a user to switch off all electrical power to the air circulation system of the accelerated weathering test device. The opposite side of switch **106** is conducted by conductor **108** to terminals **1** and **10** of indicator **102** for supplying electrical power thereto for indicating to the user the actual temperature of the target board **38** during actual operation of the test device. The opposite side of switch **106** is also coupled to one end of indicator light **110**, the opposite end of which is grounded, for providing a visual indication that electrical power is being supplied to the air circulation control system of the test device. The opposite side of switch **106** is also coupled to a first terminal or bypass switch **112** which allows the user to select either controlled operation of blower motor **96** (designated in FIG. **8** by terminal **114** labeled "CONTROL") or uncontrolled, constant speed operation of blower motor **96** (designated by terminal **116** labeled "BYPASS" in FIG. **8**). Output terminals **114** and **116** of bypass switch **112** are coupled to input terminals **118** and **120** of time delay relay **122**. In the preferred embodiment of the present invention, time delay relay **122** is a solid state programmable time delay relay of the type commercially available from Electric Supply, Inc. of Phoenix, Ariz., under the designation "Macromatic SS 60222 Time Ranger". A first output terminal **124** of relay **122** is coupled to input terminal **92** of controller **82** for supplying electrical power thereto. A second output terminal **126** of relay **122** is coupled to the "hot" side of blower motor **96**. The purpose of time delay relay **122** is to cause 115 volts A.C. to be applied directly to blower motor **96** for a predetermined time interval to facilitate bringing blower motor **96** up to operating speed. After the predetermined time interval has passed, and assuming the controlled mode of operation has been selected by bypass switch **112**, electrical power is disconnected from output terminal **126** and instead switched to output terminal **124**. Accordingly, from that point forward, controller **82** regulates the voltage applied to blower motor **96**.

As mentioned above, another aspect of the present invention relates to the actuation of shield **62** to cover target board **38** in the event of an overheating condition in order to protect the test samples. In this regard, indicator **102** includes an output terminal **11** which generates an output electrical signal whenever the target board temperature sensed by thermocouple **76** exceeds a predetermined set point temperature entered into indicator **102** by a keyboard (not shown) associated therewith. In the event that the actual target board temperature sensed by thermocouple **76** exceeds the preset set point limit (typically established at 5° Centrigrade above the set point entered on controller **82**), then output terminal **11** of indicator **102** is switched to an open circuit, allowing latch **70** to release shield **62**.

While the invention has been described with reference to a preferred embodiment thereof, the description is for illustrative purposes only and is not to be construed as limiting the scope of the invention. Various modifications and changes may be made by those skilled in the art without departing from the true spirit and scope of the invention as defined by the appended claims.

I claim:

1. An accelerated weathering test apparatus of the type used to concentrate solar radiation upon target samples, said apparatus being adapted to maintain a substantially uniform target sample temperature despite variations in the daytime ambient air temperature and variations in solar radiation intensity, said apparatus comprising in combination:

a. a target board for supporting at least one test sample to be exposed to concentrated solar radiation;

b. reflector means for reflecting solar radiation and concentrating the reflected solar radiation onto said target board for illuminating said at least one test sample;

c. air circulation means for circulating ambient air over said target board for cooling said at least one test sample, said air circulation means including an electrical motor and a fan powered by said electrical motor for creating a flow of ambient air;

d. temperature sensing means mounted to said target board for exposure to said concentrated solar radiation and generating an electrical signal responsive to the temperature thereof; and

e. control means coupled to said temperature sensing means and responsive to said electrical signal for selectively controlling the application of electrical power to said electrical motor; in order to control the rate at which ambient air is circulated over said